DOCUMENT RESUME

ED 106 891 CS 501 073

AUTHOR Wackman, Daniel B.; Miller, Sherod
TITLE Analyzing Sequential Interaction Data: Two Empirical Studies.
PUB DATE Apr 75
NOTE 16p.; Paper presented at the Annual Meeting of the International Communication Association (Chicago, April, 1975)

EDRS PRICE MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS *Behavior Patterns; *Communication (Thought Transfer); *Group Relations; Interpersonal Relationship; *Research Methodology; Social Relations; *Systems Approach; Systems Concepts

ABSTRACT

Systems descriptions vary in two essential ways. First, they vary in terms of the kinds of behaviors used in describing the system. Second, they vary in terms of the way the data are handled. The analysis of interaction patterns in dyads, groups, and larger systems has been difficult to describe. In this paper, an attempt is made to present a viable method for describing verbal communication patterns of married couples' interaction. This method is demonstrated through two empirical studies; the first study analyzes the stability of interaction patterns of married couples over a two-year period; the second study compares couples involved in counseling with couples not involved in counseling. The implications of the methodology for future research are discussed. (RB)

ED106891

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ANALYZING SEQUENTIAL INTERACTION DATA: TWO EMPIRICAL STUDIES*

by

Daniel B. Wackman
Communication Research Division
School of Journalism and Mass Communication
University of Minnesota
Minneapolis, Minnesota 55455
(612) 373-3369

and

Sherod Miller
School of Medicine
University of Minnesota
Minneapolis, Minnesota 55455
(612) 332-4812

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY
Daniel B. Wackman
Sherod Miller
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER"

Paper Prepared for Interpersonal Communication Division
International Communication Association
Chicago, Illinois
April, 1975

*The research was supported in part by a grant from the National Institute of Mental Health to the University of Minnesota Family Study Center, Dr. Reuben Hill, principal investigator, for a program of study of the "Problem-solving behavior of family groups" (Contract number: 5 ROl MH 15521-05, National Institute of Mental Health); staff time at the Minneapolis Family and Children's Service; and grants from the American Lutheran Church (ALC) and Roman Catholic Church through Monsignor John J. O'Sullivan, administered by the Augsburg College Social Science Research Center; Dr. Robert W. Clyde, principal investigator.

CS 501 073

ANALYZING SEQUENTIAL INTERACTION DATA: TWO EMPIRICAL STUDIES

The analysis of interaction patterns in dyads, groups, and larger systems has posed a most difficult problem for researchers over the past 20 years. The basic problem has been this: How can patterns of interaction, i.e., recurring sequences of behaviors among members of a system, be described validly and reliably? The purpose of this paper is threefold. First we will present a method for describing verbal communication patterns of couples' interaction. Second, we will demonstrate the use of this method in two empirical studies, one analyzing the stability of interaction patterns of married couples over a two-year period, and the second comparing couples involved in counseling with couples not involved in counseling. Third, we will discuss some implications of the methodology for future research.

Alternative Methods for Describing System Patterns.

System descriptions vary in two essential ways. First, they vary in terms of the kinds of behaviors used in describing the system. This variation is indicated by the large number of interaction coding systems which have been developed. These range from very general systems, such as Bales Interaction Process Analysis system (1951), to rather specific systems, such as Flander's (1967) teacher-pupil interaction system and Hill's (1965) system for describing interaction in therapy groups. The specific interaction coding system a research selects depends largely on his specific research focus. In the present research, we have used a modified version of the Hill system; we will describe this system later in the paper.

The second major way in which system descriptions vary is in terms of how the data is handled. Essentially, there have been three major approaches to the analysis of interaction data.

The first and simplest approach might be termed the "Binary" approach which looks for the occurrence or nonoccurrence of a certain behavior. Here the researcher is attempting to answer the question, "How frequently do members of a system exhibit a behavior, if at all?" This may often be a trivial question, but sometimes it isn't. And, in fact, an answer to the question can sometimes provide much of the information one might need for diagnostic purposes.

For example, suppose a married couple comes to a marriage counselor for help. The marriage counselor might have the couple discuss one of their problems by themselves, without his intervention. His observations could simply concentrate on answering a number of basically "yes/no" questions: Does either partner express his feelings? Does either partner blame the other? etc. Or, more elaborately, he might ask, How often are feelings expressed? How frequently? Is criticism accepted? Answers to these types of questions will enable the counselor to begin describing the couple's system. This approach was used by Mishler and Waxler (1968) in their study of normal families and those with diagnosed schizophrenics.

The second approach is the "Relative Frequency" approach. The basic question for the research using this approach is the following: "Given that at least one member of a system exhibits a behavior, what is the distribution of the behavior among members of the system?" This relative frequency approach is the one used by most interaction analysts. This approach represents a

a higher level of analysis than the binary approach, since data indicate something about how a system operates, not simply whether one or more system members use a behavior.

Counselors in using this approach would focus their observation of a married couple on such questions as: Does the husband or wife express his or her feelings more frequently? Which partner blames the other more often? Which partner accepts criticism from the other more frequently? etc. Answers to these questions will help the counselor develop a description of the relative dominance of system members in using various behaviors, thereby helping him to begin forming a description of the interdependencies of system members' behavior. This approach was used by Kenkel (1963) in his study of husband/wife decision making, and also by Mishler and Waxler (1968) in the study noted above.

The third method is the "Sequential Analysis" approach. Researchers using this approach are trying to answer this basic question: "What are the sequential redundancies of the behaviors of system members?" This analysis is at a higher level since data indicate not only which system member dominates on a behavioral dimension, but also the kinds of behavior exhibited by A following a behavior exhibited by B, i.e., what the behavioral interdependence of system members is.

Counselors in using this approach would focus their observation on such questions as: When the husband exhibits hostility to the wife, what does she do? When the husband accepts criticism from the wife, how does she respond? etc. Answers to these kinds of questions can provide the counselor with a more complete description of a couple's interaction patterns (i.e., repeating sequences of behaviors) and consequently the interdependence of the members' behaviors. Haley (1964) has used this approach in studies comparing the interaction patterns of normal families and those with a schizophrenic child.

A major difference between the first two approaches and the sequential analysis approach is a change in the unit of analysis. The first two use a single act (speech) as the unit of analysis, summing instances of the same behavior to develop a score for the system in the first approach, and summing instances of the behavior separately for each system member, then developing a relative frequency score in the second approach. On the other hand, in the sequential analysis approach, the unit of analysis is at least two sequential acts. For example, in Haley's research, statements of three-person family groups were coded in sequences of two acts, such as mother/child, child/father, father/child, child/father, etc. Each single act is coded in two separate units. This coding results in a matrix constructed to describe the system's behavior:

Figure 1

Diagram of Two-Act Sequential
Communication Patterns Within a Family

		Second Act: Mother	Father	Child
First Act	Mother			
	Father			
	Child			

From this data, it could be determined whether, for example, patterns such as the following existed in the family: father talks to mother but not to child, child talks to father but not to mother, etc.

The sequential analysis approach does not require a two-act unit of analysis, but it does require that at least two acts be indluded in the unit in order that the sequential aspect of the data can be retained. Actually, sequential analysis can include any number of acts in the unit of analysis; however, if more than three acts are included, the number of possible combinations can become very large, and in some cases unmanageable.

In the present research, we have adopted a three-act unit of analysis. Our decision to use the three-act sequence is based upon both a theoretical analysis and an empirical analysis. The theoretical analysis follows the rationale developed by Bales (1951) and by Bateson and Jackson (1964). In a long sequence of interchanges between two partners in a dyad, each speech is simultaneously a stimulus, response, and reinforcement.

For example, take the sequence $A_1/B_1/A_2/B_2$. Speech A_2 is a stimulus to speech B_2. At the same time, A_2 is a response to speech B_1. And, again simultaneously, A_2 is a reinforcement (either positive or negative) of the B_2 response to the stimulus A_1.

Further, in terms of our specific conceptualization of communication, the three-act unit of analysis appears to have both theoretical and empirical validity. Using this unit enables us to generate a set of system-level variables which simultaneously considers both individuals' contribution ot the on-going interaction and the interdependence of these contributions, thereby providing a description of the system as a whole.

A complete description of this conceptualization will be presented later in the paper, but here we will point out the following: The first act in any three-act sequence represents an invitation to work on a personal or relationship issue (or to continue in work if it has already started). The second act represents an acceptance (or rejection) of the invitation to work. The third and key act represents a confirmation (or disconfirmation) of the invitation made in the first act. We define "systemic work" as occurring only if at least three work speeches follow one another sequentially. If only one or two work speeches occur in a three-act sequence, we classify the sequence as a "work potential" sequence.

The empirical validity of this definition of "system work" is indicated by the following data. From 19 sample of the interaction of 31 non-counseling couples (described later), 169 potential work sequences were indentified, i.e., three-act sequences which began with a work speech. Of these sequences, 68 percent ended after one statement when the other person rejected the first person's invitation to work. Another 14 percent of the sequences ended after two acts when the first person disconfirmed his original invitation to work. Only 18 percent of the work potential sequences actually became "systemic work"--3 sequential work speeches. Of this 18 percent, only 30 percent (5.4 percent of the total) ended after three acts, 43 percent (7.7 percent of the total) lasted from four to nine acts, and 27 percent (4.9 percent of the total) continued for ten acts or more. These results indicate clearly that once a couple has begun to work on an issue (i.e., an invitation to work has been made, accepted, and confirmed by three work speeches), there is a high probability that "systemic work" will continue.

Thus, on both theoretical and empirical grounds, the choice of a three-act sequence as the unit of analysis appears justified. The remainder of this paper will focus on the sequential analysis of various system communication patterns.

Verbal Communication Styles Framework.

Our conceptualization of communication is based upon Hill's (1965) earlier system, developed for describing communication in therapy groups. This system is known as the Hill Interaction Matrix. The modified version developed for this research is called the Verbal Communication Styles Framework--VCSF. (Miller and Peterson, 1975)* The VCSF takes into account both content (i.e, what's said) and relationship (how it's said) aspects of communication (Watzlawick, et. al, 1967). Focusing on the relationship aspect of communication for purposes of this study, the framework is operationalized into four distinct styles of communication, characterized by different sets of intentions which are inferred from tone of voice and other more specific verbal behavior.

Figure 2 lists several representative intentions associated with each of the four distinct communication styles.

Figure 2

Representative Intentions
Associated With Speaker's Style

Style I--intending to be: sociable, playful, conventional.

Style II--intending to be: persuasive, demanding, blaming, evaluative, reactive.

Style III--intending to be: explorative, elaborative, tentative.

Style IV--intending to be: disclosing, explicit understanding, responsive.

Styles I and II compose a "non-work" mode of communication while Styles III and IV compose a "work" mode (Hill, 1965). The term "work" is rather difficult to define in a social/psychological sense. However, it is used to denote any speech in which the speaker attempts to identify and disclose his own thoughts, feelings and intentions associated with an issue or problem which concerns the speaker or involves another person present in the situation. In general, the content of work speeches focus on personal or relationship issues (e.g. trust, control, intimacy, specific behaviors).

In the work mode, the style with which content is expressed is composed of behaviors which facilitate and reveal the speaker's personal self-awareness. In effect, the speaker openly, clearly, honestly and directly shares his thoughts, feelings and wants in relation to the issue, without defending or blaming himself, the other person, or demanding change.

In the present study we are particularly interested in the style aspect of communication exclusive of content. Communication behavior was collected using the following procedure: First, we asked couples to sit together in private with a tape recorder running and discuss a task for five minutes. After five

*This publication provides information beyond the scope of this study on styles of communication, specific coding procedures and conventions (for single speeches and interaction patterns), intercoder reliability, etc.

minutes, we knock, ask if they wish more time, and, if not, introduce another task for them to discuss. Discussion tasks typically include: "Plan something which the two of you can do together" (Riskin 1963). "Discuss the things that each of you does that irritates the other." "Discuss the things that each of you does that pleases the other." The transcript and data presented subsequently in this paper are taken from discussions of what irritates. Non-work/work modes are indicated by "N" and "W" respectively.*

In terms of the binary coding (work and non-work) of three-act sequences, there are eight possible sequences. Figure 3 presents the eight possibilities. The entire table is oriented around work acts, i.e., "starting toward," "cooperating toward," "work," and "ending work." If each three-act sequence in a transcript is classified into these eight possibilities, various cells in the table begin to build up. From this build-up (i.e., sequential redundancies in behavior of system member), a vector of patterns emerges for characterizing each couple's interaction patterns. For our purposes, there are four general patterns of interest.

Figure 3

The Eight Possible Three-Act Sequences
of the Non-Work/Work Style Communication

Person A's Stimulus and Reinforcement	Person B's Response: Non-Work (N)	Person B's Response: Work (W)
	N N N — Systemic Non-Work — 1	N W N — Persists Away — 2
	W N N — Cooperates Away — 3	W W N — Ends Work — 4
	N N W — Starts Toward — 5	N W W — Cooperates Toward — 6
	W N W — Persists Toward — 7	W W W — Systemic Work — 8

*Speeches may be composed of several statements varying in style by the same person. When this occurs, the last style code is used to determine whether or not the speech is in a non-work or work mode.

The first pattern (shown below) consists of a build-up in cell #1--systemic non/work.

Work

Non-Work A B A B A B

A = man

B = woman

The second pattern of interest consists of a build-up of sequential acts in cell 8--systemic work.

Work A B A B A B

Non-Work

A third pattern involves the sum of cells 5, 6, 7-starts toward, cooperates toward, and persists toward. This indicates a cooperative pattern toward work. Unless work potential moves into work, it becomes an ambivalence impasse. (See below.)

Work A B A B A B

Non-Work A B B A

The fourth pattern captures dissonance in moving toward work. Here a couple is caught in an impasse. There are actually two types of impasses. The first type involves both members of the couple. This occurs whenever one person consistently "persists toward" work, while the other person consistently "persists away" from work. In effect, one partner pushes the other toward work, but the other pulls away from it. This type of impasse occurs when cells 7 and 2 build up.

Work B B B

Non-Work A A A

We term the second type of impasse, "ambivalence". Here a member prevents systemic work by alternately "starting work" and "ending work" without "cooperating toward" work. It is as though the person is unclear about his/her own intentions to really do work. This type of impassee stems from a build-up in cells 5 and 4.

Work B A B A

Non-Work A B A B

In the present research, we are attempting to test the usefulness of our conceptualization and methodology for describing dyadic communication patterns. In the first study, we analyze the stability of married couples patterns over a two-year period. In the second study, we compare samples of counseling and non-counseling couples in terms of communication patterns. In this study, we also look at the relationship between communication patterns and material satisfaction.

Sample Descriptions.

In the spring of 1970, couples married less than six years were recruited from Lutheran and Catholic churches in the Twin City area to participate in a "Young Family Study" conducted by the Augsburg College Social Science Center. Thirty-one couples were recruited. Two years later data was again collected from these couples, although only 19 could still be contacted. Thus, these 19 couples represent the sample for the first study reported here.

The thirty-one non-counseling (NC) couples are also utilized in the second study. They are compared to a second sample of couples who had contacted Minneapolis Family and Children's Service for marriage counseling. In order to make the two samples most comparable, couples were selected from the marriage counseling study whose length of marriage corresponded with participants in the Young Family Study. The marriage counseling (MC) sample size is 29 couples.

The differences between the two samples on demographic characteristics are small but fairly consistent. The non-counseling couples had been married longer (NC 4.71 years; MC 3.09 years); they had more children (NC 1.13 children; MC--.97 children) and were older for both husbands and wives (NC husbands--26.1 years, wives--24.2 years; MC husbands--25.3 years, wives--23.8 years). No significant differences emerge in the religious composition of the two samples.

In terms of social status characteristics, the following differences between the two samples appear. The NC couples were more highly educated than the MC couples; this difference held true for both husbands and wives. Most NC husbands and wives had at least some college experience, whereas the MC husbands and wives were more likely to have terminated with a high school degree. Likewise, the occupational status of the NC husbands on the Hollingshead Index (1957) was a half scale-point higher than the MC husbands (YFS=3.35; MC husbands=3.97), and for non-housewives the NC females were two full scale-points higher on occupational status (NC wives=2.75; MC wives=4.83).

First Study.

Couples 5-minute interaction concerning "what irritates" were recorded at a two-year interval. The stability of couples' communication patterns over these two years can be assessed using all of the approaches described earlier. This will be done below.

Using the Binary Approach, the proportion of work style statements by both the man and woman compared to the total number of statements by the two was calculated. The distributions at time one and time two are shown in Table 1; as can be seen, the distributions are very similar at the two times. The correlation of behaviors over the two-year interval is .74, indicating a high degree of stability of the amount of work statements by members of the couple over this time period. Thus, analysis of these couples in terms of the Binary

Approach would suggest a high degree of stability in their communication pattern.

		T_1	T_2
	.0	3	3
Proportion of	.1-.2	7	7
work statements	.3-.4	4	3
	.5-.9	5	6
	Total	19	19

Table 1. The Binary Approach--proportion of work statements by members of a couple at time one and time two.

Using the Relative Frequency Approach, the number of work statements made by the man and by the woman separately were calculated. Then each couple was coded into one of five categories--man much more (work) than woman, man slightly more than woman, man and woman equal, woman slightly more than man, woman much more than man. Table 2 indicates the distribution of couples at the two times, and again, these distributions are quite similar. However, the correlation between the relative frequency of work statements over the two-year interval is only .37, indicating relatively low stability in the pattern of work communication within the couple over this time period. Thus, analysis of the couples in terms of the Relative Frequency Approach would suggest a low degree of stability in their communication pattern. Of course, this contrasts with the conclusion one would draw if he used the Binary Approach.

		T_1	T_2
	Man much more	5	3
Relative	Man slightly more	2	5
proportion of	Equal	6	4
work statements	Woman slightly more	3	4
	Woman much more	3	3
	Total	19	19

Table 2. The Relative Frequency Approach--relative proportion of work statements by members of the couple at time one and time two.

When the Sequential Analysis approach is used, four communication patterns can be identified for each couple, rather than the single pattern described with the other two methods. As with the other methods, the general distribution of patterns was quite similar at each point in time. However, analysis of the stability of these patterns indicates a mixed picture. Three of the patterns of interest showed relatively high stability, and one showed low stability. The T_1-T_2 correlation for nonwork pattern was .57; for work pattern, it was .64; for cooperation toward work, the correlation was .49. All of these indicate relatively high stability for these patterns. On the other hand, the correlation for the impasse pattern was -.18, indicating that an impasse pattern is

rather unstable over a two-year interval.

In terms of our conceptualization of communication patterns, these results make a great deal of sense. The three empirically stable patterns would all appear to be conceptually stable also, since each of them represents a pattern which involves cooperation at the level of intentions. Nonwork pattern represents an agreement not to work seriously on an issue, and both work pattern and cooperation toward work represent agreement to treat the issue seriously and self disclose about it. On the other hand, an impasse pattern represents a conflict of intentions, with one member of the couple wanting to work and the other member not wanting to work. To maintain this conflict in intentions over a two-year period would seem to be rather difficult; rather, we would expect the the couple to come to some agreement, thereby shifting to a work pattern or to a nonwork pattern. But whatever the case, the empirical findings indicating that an impasse pattern is an unstable one is clearly consistent with the conceptualization.

It seems to us two important points emerge from the sequential analysis. First, these results suggest that a couple's interaction pattern is more fruitfully conceptualized as a set of patterns than as a single pattern. Only 5 of the 19 couples in the sample had a single dominant pattern. The other couples exhibited a variety of configurations involving mixes of substantial frequencies of two, three, and sometimes all four patterns. Thus, it would appear to be more accurate to describe a couple's interaction system as a set or vector of patterns, rather than trying to describe the couple's system in terms of a single dominant pattern.

Second, the results of the sequential analysis suggest a reason for the conflicting results from the Binary and Relative Frequency analysis. Whereas the Binary analysis indicated high stability, the Relative Frequency analysis indicated rather low stability. It may be the case that, since the impasse pattern has low stability, the balance of work style communication within the couple shifts over time. Thus, although the couple's total amount of work style communication is quite similar over the two-year interval, the relative balance of work communication (i.e., the man/woman distribution) changes substantially. It would appear then that the sequential analysis provides information concerning the dynamics of change in the couple's interaction pattern, not just information about the change itself.

Second Study.

The second study was conducted to determine differences between counseling and non-counseling couples communication patterns. We also were interested in the relationship between various communication patterns and the marital satisfaction of members of the couples.

As we expected, couples enrolled in marriage counseling were much less satisfied with their marriage than were the other couples. Only 10 percent of the males and 7 percent of the females in the marriage counseling sample were highly satisfied with their marriage, compared to two-thirds of the males and females in the non-counseling sample.

We expected that the two samples would differ in terms of several communication patterns. In particular, we expected non-counseling couples to exhibit more work pattern and work potential communication, and marriage counseling couples to exhibit more impasse pattern communication. These expectations only partially confirmed. The two samples did not differ significantly in terms of either work pattern or work potential communication

though the trend is in the predicted direction. However, as expected, marriage counseling couples were more likely to exhibit impasse pattern communication.

Table 3

System Communication Patterns, by Type of Couple

Communication Patterns	Non-Counseling	Marriage Counseling
Work Patterns	.11	.09
Cooperation Toward Work	.07	.07
Impassee	.16*	.21*
Non-Work	.53	.53

*p< .10

These results may indicate the following: Non-counseling couples have less pressing personal and relationship issues than marriage counseling couples; and when they do choose to work on the issues, they are not as likely to be caught in an impasse in trying to begin work. Marriage counseling couples, on the other hand, have serious relationship issues, as evidenced by the fact of their enrolling in counseling. When they do attempt to work on their issues, they have difficulty conducting work because they more frequently are caught in an impasse pattern.

Closer examination of the data in Table 3 supports this interpretation. Both the non-counseling and marriage counseling couples were either engaged in work or attempting to engage in work about the same percentage of time, 34 percent and 37 percent respectively. However, non-counseling couples were cooperating with each other in work and work potential in 53 percent of these instances, and they were caught in an impasse in 47 percent of the instances. On the other hand, marriage counseling couples were cooperating toward work in only 42 percent of these instances, while they were caught in an impasse pattern in 58 percent.

Shifting from the couple to the person as the unit of analysis, we found the following regarding types of impasse behaviors. Although the results are not statistically significant, both males and females in marriage counseling couples were more likely to persist toward work when their spouse did not want to do so, than their counterpart in the non-counseling sample. (See Table 4.) Only among the marriage counseling females was there more "ambivalent" impasse behavior. There was no difference between males in the marriage counseling and non-counseling samples.

Table 4

Male and Female Impasse Behavior by Type of Couple

	Non-Counseling	Marriage Counseling
Male Persistence Toward	.084	.131
Female Persistence Toward	.061	.086
Male Ambivalence	.052	.052
Female Ambivalence	.048*	.083*

*$p < .05$

Our analysis now shifts to examining the relationship between individual satisfaction and behavior. We have already indicated that both non-counseling males and females differed from their counterparts in marriage counseling sample in terms of the impasse behavior we have labelled "persistence impasse." Furthermore, both members of marriage counseling couples were less satisfied with their marriage than were members of non-counseling couples. The question then becomes, "What kind of a relationship is there between satisfaction and persistence impasse behavior?"

If persistence toward work was an <u>expression</u> of dissatisfaction, we would expect that male persistence toward work would be related to male dissatisfaction, but not to female dissatisfaction, and conversely. On the other hand, if the dissatisfaction was a <u>result</u> of being pursued by partner, we would expect that male persistence would be related to female dissatisfaction, but not to male's dissatisfaction, and conversely.

As Table 5 indicates, the data support the second possibility, i.e., that dissatisfaction is a function of being pursued toward work by the <u>partner</u>. Female satisfaction was negatively related to make persistence toward work, <u>and</u> male satisfaction was negatively related to female persistence toward work. However, male persistence toward work was <u>not</u> related to male satisfaction and female persistence toward work was not related to female satisfaction. Thus, it would appear that dissatisfaction is a function or <u>result</u> of partner's persistence toward work.

Table 5

Combined Samples Male/Female Marital Satisfaction by Persistence Impasse Behavior

	Male Persistence Impasse				Female Persistence Impasse			
	Low	Medium	High		Low	Medium	High	
Male Satisfaction	2.36	2.12	2.00	n.s.	2.37	2.10	1.82	$p < .10$
Female Satisfaction	2.24	.188	.178	$p < .20$	2.00	2.10	1.82	n.s.

Discussion.

In our opinion, the most important finding of this paper is a subtle one which is frequently overlooked in research. That is, few couples have only one pattern of interaction. Instead, most couples have multiple patterns. It is incumbent upon the communication researcher to look for these multiple patterns, rather than simply try to classify a couple in terms of a single dominant pattern. Although other analytic approaches can probably identify multiple patterns for a couple, the virtue of the sequential analysis approach is that the multiplicity of a couple's pattern flows directly from the analysis. These same remarks apply to other analytic units too, of course, and probably even more forcefully. That is to say, if most couples have multiple patterns, isn't it even more likely to be the case that small groups, classrooms, or work organizations have multiple patterns? And if so, shouldn't the researcher search carefully for this multiplicity? We think so, and sequential analysis provides a useful analytic approach for doing just that.

We think the data in our studies suggest also the contribution sequential analysis can make to exploring the dynamics of interaction systems. In the first study, the lack of stability of the couples' impasse pattern provides an explanation for the apparent lack of stability of couples' interaction patterns when viewed in terms of the Relative Frequency approach. In the second study, a specific time of impasse behavior (persistence impasse) appeared to result in decreased marital satisfaction of the partner, the one being pushed to do something he/she didn't want to do, i.e., work on their relationship. Thus, in both studies, examination of certain aspects of the couple's communication patterns shed light on the dynamics of the system.

These remarks are not meant to indicate that we think sequential analysis is either easy or problem free. As anyone who has conducted interaction analysis knows, collecting and processing the data is time consuming and expensive. And when the data is collected, only a small sample of a couple's behavior is available. Whether this sample is a valid representation of the couple's pattern is an important question, but often it remains unanswered. However, these difficulties and problems are similar for all interaction analysis researchers irrespective of the analytic approach they adopt.

A new set of problems confronts the interaction analyst, however. What is the appropriate analytic unit? Two statements, three statements, four, or more? We believe there is substantial theoretical and empirical justification for using a three-act sequence as the appropriate unit of analysis, but other choices may be useful for other researcher's purposes. How can the various sequences be described? In terms of our conceptualization of behavior as either work or non-work, only eight possible sequences arise for our three-act unit. But if the conceptual scheme involves three or four or five distinctions among behaviors, the number of possible sequences increases immensely. As a consequence of this, the researcher might have to sample collect enormous behavior samples in order to have much confidence in his description of the system's behavior. And even then, the description may become extremely complicated, so much so that it would almost be meaningless. However, by focusing on the build-up of various cells in a matrix, as we have done and as Flanders (1967) does also, the complexity of description can be reduced substantially. Nevertheless, the larg number of possible sequences remains a significant problem.

Shifting from a pair of people to a small group or larger unit, such as a classroom, also adds important complications, and increases the number of

possible sequences immensely. However, if specific individuals are ignored and roles are used in coding interaction, such as teacher-student in Flander's work, the analysis can be kept manageable.

Even with these various difficult problems in mind, there remains one compelling reason for utilizing a sequential analysis approach. Interaction does occur over time. As communication scientists, we must assume that these behaviors-in-sequences are patterned, i.e., that behaviors are interdependent. The only way to examine questions about the kinds of patterning and interdependence that occur in communication is to retain the sequential nature of communication in the data we collect and in our analysis of it. And this means that we must use a sequential analysis approach.

REFERENCES

Bales, F. R., Interaction Process Analysis. Cambridge: Addison-Wesley, 1951.

Bateson, G., and D. D. Jackson, "Some Varieties of Pathogenic Organization." In. D. McK. Rioch, ed., Disorders of Communication, Vol. 42, Research Publications. Association for Research in Nervous and Mental Disease, 1964, pp. 270-283.

Flanders, N., "Some Relationships Among Teacher Influences, Pupil Attitudes, and Achievement." In E. Amidon and J. Hough, eds., Interaction Analysis: Theory, Research and Application, Reading, Mass.: Addison-Wesley, 1967, pp. 217-242.

Haley, J. "Research on Family Patterns: An Instrument Measurement." Family Process, 13 (1964), 41-65.

Hill, W. F., Hill Interaction Matrix: A Method of Studying Interaction in Psychotherapy. Los Angeles: University of Southern California Youth Study Center, 1965.

Hollingshead, A. B. "Two Factor Index of Social Position." 1965 Yale Station, New Haven, Connecticut, 1957.

Kenkel, W. F., "Observational Studies of Husband-Wife Interaction in Family Decision-Making," In M.B. Sussman, Sourcebook in Marriage and the Family. Boston: Houghton Mifflin, 1963, pp. 144-156.

Miller, S., E. W. Nunnally and D. B. Wackman. "A Communication Training Program for Couples." Minneapolis, Minnesota: Interpersonal Communication Programs, Inc., 1974.

Miller, S., E. W. Nunnally and D. B. Wackman, Minnesota Couples Communication Program: Couples Handbook. Minneapolis, Minnesota: Interpersonal Communication Programs, Inc., 1972.

Miller, S., and G. Peterson. Verbal Communication Styles Framework: A Method for studying Dyadic Interaction. Will be available in fall, 1975 as a technical report, University of Minnesota, Family Study Center, Minneapolis, Minnesota.

Mishler, E. G., and N. E. Waxler, Interaction in Families. New York: Wiley, 1968.

Riskin, J. "Methodology for Studying Family Interaction," Archives of General Psychiatry, 8 (1963), 343-48.

Sorrells, J. M. and F. R. Ford, "Toward an Integrated Theory of Families and Family Therapy." Psychotherapy: Theory, Research and Practice 6 (Summer, 1969), 150-60.

Walter, W., The Family: A Dynamic Interpretation, revised by R. Hill. New York: Holt, Rinehart, and Winston, 1951.

Warkentin, J. and C. A. Whitaker. "Marriage--A Model of Intimacy in Our Society," Presented in Philadelphia on April 7, 1965.

Watzlawick, P., J. H. Beavin, and D. D. Jackson. Pragmatics of Human Communication, New York: W. W. Norton and Co., Inc. 1967.